PROJECT CHARGE: 1708

PROJECT TITLE: PHYSICAL & CHEMICAL PROPERTIES OF TOBACCO

PERIOD COVERED: March 1 - March 31, 1977

PROJECT LEADER: C. B. Hoelzel

DATE OF REPORT: April 12, 1977

Sufficient data has been obtained from testing cigarettes in the Instron to allow us to conclude that the testing method gives useful and meaningful information. A status report is in preparation.

A physical model of the CV test has been derived, based on cylinder wall friction and tobacco compressibility. The model makes the non-realistic assumption of a uniform isotropic pressure distribution within the tobacco bed. Nevertheless, the computed results agree qualitatively with observed data and provide considerable physical insight.

A mathematical relaxation model, based on "spring and dashpot" elements has been programmed into the computer so that experimental relaxation data can be fitted and described in terms of equivalent mechanical elements.

The study of water extracted bright tobacco, which was described last month, has been started. Thus far, it has been shown 1) that the equilibrium OV of uncased bright is unaffected by freeze drying; 2) that there is little, if any, difference between equilibrium OV of a control vs the extracted, recombined and re-equilibrated sample, nor is there any real difference between the control and the materials which were extracted and re-equilibrated without recombination; 3) that the water solubles (which comprise ca 68% of the total) re-equilibrate to 13.6% OV and the residual fiber re-equilibrates to 11.4% OV.

Documentation for the PLOT.77, FILES.77 and TEXT.77 systems has been prepared. A User's Guide for these computer-assisted, self-teaching systems has been prepared and is undergoing proofing and revision.

References

H. A. Hartung, Notebook 4593, pp. 93, 94.
B. C. LaRoy, Notebook 7052, pp. 80-87.
J. C. Crump, Notebook 6924, pp. 81-83.

CB Hoelzel

/ev

2022151845

Source: https://www.industrydocuments.ucsf.edu/docs/zxxm0000